UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,833	03/02/2007	Patrick Didier Teulet	15279NP	3027

293 7590 11/13/2009

DOWELL & DOWELL P.C.
103 Oronoco St.
Suite 220
Alexandria, VA 22314

EXAMINER	
HILTON, ALBERT	
ART UNIT	PAPER NUMBER
4171	

MAIL DATE	DELIVERY MODE
11/13/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/561,833	TEULET, PATRICK DIDIER	
	Examiner	Art Unit	
	Albert Hilton	4171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/22/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This is a first action on the merits. Claims 1-10 are pending.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over HORY (PCT Publication No. WO99/421421, as translated in US Patent No. 6767499) in light of OLBERG (US Patent No. 1429089) and PLATSCH (US Patent No. 5964155).

5. Regarding claim 1, HORY discloses a device (**20**) for laying a layer of powder (**104**), comprising storage means (**second cylinder 40**), powder feeder means (**second cylinder 40**, **piston 46**), a deposition zone (region above **first cylinder 38**) for depositing said powder (**104**) taken from said storage means (**40**, **46**), and means (**roller 94**) for compacting the powder (**104**) deposited in said deposition zone (HORY: column 4, lines 28-37, column 5, lines 27-29, and Fig. 4A-E), with said storage means (**40**), deposition zone, and powder (**104**) being situated inside an enclosure (**thermally insulated chamber 60**) that is suitable for being maintained at high temperature

(HORY: column 4, lines 66-67 to column 5, lines 1-4) while enabling the cylinder (**94**) to be guided and driven from outside said enclosure (**60**) (HORY: column 5, lines 30-38). The circular cylinder (**94**) of HORY is adapted to compact the powder (**104**) deposited on said deposition zone (HORY: column 5, lines 27-29), but is not provided with a groove formed in an outside surface of said cylinder (**94**) adapted to take powder from a storage means (**40**, **46**) and to feed it to said deposition zone.

6. However, the use of a grooved cylinder to transport material is known in the art, as is shown in OLBERG. OLBERG describes a cylinder (**bowl 10**) provided with an outside surface that is adapted to transport material from one zone and feed it to another zone (OLBERG: column 1, lines 9-20, column 4, lines 69-76, and Fig. 2). OLBERG further discloses that such a cylinder allows for material to be placed at a desired location in a compact mass without being scattered by a scraping tool (OLBERG: column 4, lines 76-85).

7. One of ordinary skill in the art at the time of the invention, motivated by a desiring to transfer the powder material (**104**) in the apparatus of HORY from the storage means (**40**, **46**) to the deposition zone in a compact mass without scattering excess material outside the deposition zone, would therefore have found it obvious to add the material-transporting cylinder of OLBERG to the device of HORY, with the reasonable expectation that such a modification would improve the efficiency of the device.

8. The material transfer cylinder in OLBERG is not formed in the same grooved shape as the cylinder of the instant claim. However, it is known in the art that a groove in a cylinder is useful for transporting powder. PLATSCH discloses a cylinder

(**application roller 38**) with a cross-sectional groove that is designed to convey powder (PLATSCH: column 3, lines 66-67 to column 4, lines 1-5 and Fig. 1). PLATSCH further teaches that such a cylinder provides for effective and reliable transfer of powder particles (PLATSCH: column 1, lines 38-42 and column 2, lines 19-22). One of ordinary skill in the art at the time of the invention, motivated by a need to efficiently transfer a consistent amount of powder in a sintering apparatus, would therefore have found it obvious to incorporate the groove of PLATSCH into the combined apparatus of OLBERG and HORY.

9. Regarding claim 2, the placement of a groove in the cylinder of HORY would result in a surface adapted to compact powder (**104**) comprising a fraction of an outside of an outside surface of a cylinder (**94**) (HORY: column 5, lines 27-29) in which a groove is formed (OLBERG: column 2, lines 55-60 and Fig. 2).

10. Regarding claim 3, the groove in the cylinder of OLBERG extends between the two ends of the cylinder (**bowl 10**) in a direction generally parallel to the longitudinal axis of said cylinder (**10**) (OLBERG: Figs. 1,2).

11. Regarding claim 5, although the circumference of the cylinder (**roller 94**) described by HORY is not perceptibly greater than the diameter of the deposition zone (HORY: Fig. 4A-E), such an increase in the size of the cylinder would not cause the device to function in a patentably distinct way from the prior art (see MPEP 2144.04).

12. Regarding claim 7, the device (**20**) of HORY comprises an enclosure (**thermally insulated chamber 60**) that is adapted to be maintained at approximately 900° C (HORY: column 4, lines 52-54, 66-67 to column 5, lines 1-4).

13. Regarding claim 8, the cylinder **(roller 94)** of HORY is positioned and guided by a guide means **(rods 96, arm 98)** and an actuator **(control means 100)** is located outside the enclosure **(thermally insulated chamber 60)** of the device (HORY: column 5, lines 30-36 and Figs. 2,3).

14. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over HORY and OLBERG and PLATSCH as applied to claims 1-5 and 7-8 above, and further in view of BRENNEMAN (US Patent No. 3854975).

15. Although HORY does not specify the surface roughness of the cylinder **(roller 94)**, it is known in the art that when a powder is pressure-fixed to a substrate, powder grains build up in surface pores, and that a smooth, non-porous roller is preferable to prevent adhesion of the powder to the roller (BRENNEMAN: column 4, lines 6-16).

16. One of ordinary skill in the art at the time of the invention, given the teachings of BRENNEMAN, would therefore have found it obvious to make use of a cylinder with a lower surface roughness than that of the substrate, with the reasonable expectation that powder particles would preferentially become fixed to the substrate. Furthermore, said artisan would have found it obvious to adapt the roughness of the cylinder to be smaller than the minimum grain size of the powder, with the expectation that powder would not build up in surface pores of the roller.

17. Claims 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over HORY, OLBERG and PLATSCH (US Patent No. 5964155) as applied to claims 1-5 and 7-8 above, and further in view of MOLLER (US Patent Application No. 2002/0195439).

18. Regarding claim 9, MOLLER discloses the use of flaps **(flap 61, 63)** disposed in the flanks **(end wall 32)** of an enclosure **(furnace 10)** that are movable relative to a plane MOLLER: paragraph 32 and Fig. 8). MOLLER teaches that such a movable flap can be used to regulate the temperature of the enclosure by insulating the enclosure and directing the flow of cooling gas into the chamber (MOLLER: paragraph 32).

19. One of ordinary skill in the art at the time of the invention, motivated by a need to regulate the temperature of the enclosure of the sintering apparatus of HORY, would therefore have found it obvious to provide the flaps of MOLLER to the enclosure of the apparatus of HORY in view of Olberg and Platsch.

20. Regarding claim 10, note that MOLLER teaches that the shape of the flap is not essential to its function (MOLLER: paragraph 32). The use of flaps in a triangle or parallelogram shape, in a baffle configuration, or in mutual contact would therefore not alter the operation of the device over the prior art in a patentably distinct way (see MPEP 2144.04).

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert Hilton whose telephone number is (571)-270-5519. The examiner can normally be reached on Monday through Friday, with alternate Fridays off, 8:00-4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Barbara Gilliam can be reached on 571-272-1330. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Albert Hilton
Examiner
Art Unit 4171

/Albert Hilton/
Examiner, Art Unit 4171

/PATRICK NOLAN/
Supervisory Patent Examiner, Art Unit 4171